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THE OPEN SYSTEMS UNIVERSITY AND ORGANIZATIONAL INTELLIGENCE

by

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THE OPEN SYSTEMS UNIVERSITY AND ORGANIZATIONAL INTELLIGENCE

by

James Steve Counelis+

Intelligence and the University:

The university can be likened to open systems of the natural types, i.e., biological, chemical and physical systems. This organizational understanding of the university is based upon the work of von Bertalanffy, Buckley and others.

All open systems are energy systems. Matter and the energy encased therein are imported into the system from the environment. It is "through-put" or transmuted into some product form that characterizes the system. The transformational processes are anabolic or catabolic, to use the biological terms for build-up and breakdown processes. Also,

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the processes tend to be irreversible. Once the product is produced, it is exported into the surrounding environment. The cycle begins anew with the system being re-energized from the resources of energy-locked material in the environment.

Open systems exhibit some remarkable properties. One of these properties is that of steady-state. The system remains constant at a point that is a significant distance from true equilibrium and thus capable of doing work, such as the import and export of material, the functioning of build-up and breakdown processes, and the operations of continuous irreversible processes.

A second remarkable property of open systems is that derived from the steady-state characteristic, viz., equifinality. Despite different initial conditions and after disturbances during the processes, the same final state is achieved by the system in steady-state.

A third remarkable property of open systems is seen from the perspective of thermodynamics. From this viewpoint, open systems can maintain themselves in a state of high statistical improbability, of order and organization. According to the second principle of thermodynamics, the general trend of physical processes is toward increasing entropy, viz., states of increasing probability and decreasing order or chaos or tendency toward equilibrium. Living systems maintain themselves in a state of high order and improbability. They may

evolve toward increasing differentiation and organization.

The reason is succinctly given by Bertalanffy:

> . . . In a closed system, entropy always increases according to the Clausius equation:
>
> $$dS \geq 0.$$
>
> In an open system, in contrast, the total change of entropy can be written according to Prigogine:
>
> $$dS = d_eS + d_iS,$$
>
> d_eS denoting the change in entropy by import, d_iS the production of entropy due to irreversible processes in the system, such as chemical reactions, diffusion, heat transport, etc. The term d_iS is always positive, according to the second principle [of thermodynamics]; d_eS, entropy transport, may be positive or negative, the latter, e.g., by import of matter as potential carrier of free energy or "negative entropy." This is the basis of the negentropic trend in organismic systems and of Schrödinger's statement that "the organism feeds on negative entropy."[1]

In parallel form, the university energizes itself from the social and economic environment through inputs of material resources, personnel (professional, non-professional, and students), knowledges, ideas and skills. The university organizes, transforms and produces out of the total reservoir of "energy" such things as: (1) physical resources like buildings, laboratories, libraries and equipment; (2) services: managerial, instructional, support; (3) intellectual processes: inquiry, learning, creativity; (4) human capital: educated manpower; (5) new sciences, new arts and societal criticism; (6) direct social service. When needed, the university re-energizes itself through new material resources, new personnel,

new sciences, new ideas, and new goals to service for community betterment.

By its nature, the university in America has rarely existed in the state of equilibrium, though history has seen the demise of a good many colleges and universities. Indeed, the evolved notions of academic freedom, viz., the American translation of Lehrfeiheit and Lernfreiheit, do not admit of equilibrial stances. Neither do the philosophies of the Morrill Act of 1862 and the Hatch Act of 1887 admit of equilibrial conditions. Rather, the steady-state condition of the American university is demonstrated by the tolerance and practice of multiple approaches to inquiry, learning, and curriculum. The negentropic results in university evolution are illustrated by the large range of complex organizational arrangements, facilities and curricula of bewildering variety, new arts, new sciences and new technologies, and the greater elaboration of the potential in men.

The university is an open system of high statistical improbability and order. It is a complex system of open sub-system units. These sub-system units could be departments (academic, administrative, service), decision-making bodies (faculty senates, boards of trustees, administrative councils, union negotiating groups, student government), large sub-units (schools, colleges, quasi-independent programs in curricula or

research, intra-organizational committees). Within any given university, the constituent elements are energized by inputs of material resources, personnel, knowledges, ideas, and skills. The constituent elements organize and transform their total reservoir of energy into services and products which characterize the individual components because of their designated division of labor. The services and products are utilized by other internal components of the university or become the university's direct products and services which are returned to the larger community in which the university resides.

The interchange between an open system and its environment is a significant element in the continued vitality of open systems. The import and export of matter and energy provides a communications link which informs the open system of the nature of the significant "other" in its life processes. Von Foerster's model of the intersect of the environment and organism provides a useful analogue for the university.

Von Foerster explains his feedback model in the following terms:

> The diagram shown here below sketches the circular flow of information in the system environment-organism. In the environment constraints generate structure. Structural information is received by the organism which passes this information on to the brain which, in turn, computes the constraints. These are finally tested against the environment by the actions of the organism.

With the emergence of self-reflection and consciousness in higher organisms a peculiar complication arises. A self-reflecting subject may insist that introspection does not permit him to decide whether the world as he sees it is "real," or just a phantasmagory, a dream, an illusion of his fancy. A decision in this dilemma is important in this discussion, since, if the latter alternative should hold true, no problems as to how organisms represent internally the features of their environment would arise, for all environmental features would be just internal affairs in the first place.

In which sense reality indeed exists for a self-reflecting organism will become clear by the argument that defeats the solipsistic hypothesis proceeds by reductio ad absurdum of the thesis: "This world is only in my imagination; the only reality is the imagining 'I.'"

> Assume for the moment that [a] gentleman in [a] bowler hat . . . insists that he is the sole reality, while everything else appears only in his imagination. However, he cannot deny that his imaginary universe is populated with apparitions that are not unlike himself. Hence he has to grant the privilege, that they themselves may insist that they are the sole reality and everything else is only concoction of their imaginations. On the other hand, they cannot deny that their fantasies are populated by apparitions that are not unlike themselves, one of which may be he, the gentleman with the bowler hat.
>
> With this the circle of contradition is closed, for if one assumes to be the sole reality, it turns out he is the imagination of someone else who, in turn, insists that he is the sole reality.

The resolution of this paradox establishes the reality of environment through evidence of a second observer. Reality is that which can be witnessed; hence, rests on knowledge that can be shared, that is, "together-knowledge," or conscientia.[2]

[Insert Chart No. 1 here.]

With this explanatory description of von Foerster's model, the university will be presented in these terms in the following section.

For the corporate university processes to operate effectively, the cybernetic requirement of reality-testing as described in the von Foerster model must obtain. Organizational intelligence is the substance of the structural information which reflects the constraints in the environment. It is upon this structural information that the university computes the constraints or patterns of invariants found within the environment. Also, the intra-university environment for the several sub-units is reflected in organizational intelligence about that internal environment. It is at this level that most institutional research has been focused.

Be they trustees, presidents, deans, faculty, and/or students, university leaders are the agents concerned for the survival of the institution. They are the agents involved in institutional autonomy and the development of organizational identity. And university leaders are those agents active in the performance of organizational reality-testing. These leaders collect, collate, and integrate many pieces of organizational intelligence upon which they act and/or react through organizational means. As the university evolves into an ever more complex agency, the instrumentation of organizational intelligence becomes an imperative. Larger portions of the

university's resources must go into the intelligence function of the university organization.[3] The creation of an office of institutional research or some comparable agency is a belated recognition of a felt need for university reality-testing to be instrumented. The history of such offices proves this to be the case.

A prolonged hiatus in feedback between an open system and its environment induces crisis. An open system can be starved of information about the constraint patterns within the environment; and serious trauma if not death thus can be caused. The effects of sensory deprivation in human beings are well known; and the psychic and social effects of distorted human rearing are well documented. Likewise, human organizations, including universities, can be traumatized quite seriously. Distortional sources in organizational intelligence are many. And an organization in crisis exhibits the pathology of disorientation (and more seriously dissociation), these arising from a lack of reality-testing and the organizational intelligence derived therefrom. Wilensky along with Fink and his associates provide exceptionally clear descriptive patterns of these organizational pathologies arising from inadequate feedback.[4]

As used in this context, institutional research is the formal instrumentation of the organizational intelligence function. The purpose and form of institutional research are,

generally, functions of the particular institution's biography. Questions on centralized or decentralized organizational intelligence activity, the line or staff status of the director of institutional research in the university organization, and the particular doctrine(s) on the nature of intelligence held and practiced are answered only by observing the particular university.

The fundamental administrative processes of decision-making, planning, and the management of on-going institutional operations require immediate knowledge about the status and character of the processes, the products, the services, and the operations of the university in terms of its constituent parts. Of course the utility of such organizational intelligence is the rational control and continuing guidance of the university while it is in transit toward a set of operational goals which its identity represents. The continuing process called monitoring provides reality-testing information. Two types of monitoring are generally practiced: (1) systematic monitoring; (2) occasional monitoring. Regular sampling procedures, time series data, and the budget audit are examples of systematic monitoring. Ad hoc studies, such as institutional self-studies for periodic accreditation, reflect monitoring for specific reason, occasion, or mission.

Monitoring is not concerned solely with intra-university affairs. Organizational intelligence about the

university's environment is crucial to its continued viability. The university's life processes of survival, identity, and autonomy are mirrored in its intersect with the larger society at several levels. The vectors of university relations are toward government, and the community, the economic sector, the professions and other social institutions, and the individual. Studies on the institution's graduates and dropouts, the public image and reputation of the university, governmental policies in funding, foundations' attitudes and other aspects of the "out there" world are necessary. But the primary sources of the university's organizational intelligence about the larger community are still rumor and the astute observations by those in university policy positions garnered in their relations with the social environment of the university.

The monitoring processes of the university for both its internal operations and its external relations must be known in their dynamic intersect within university decision-making. Buckley presents a general cybernetic model of five stages for the macro-social system. Upon this model, the following discussion is based.

[Insert Chart No. 2 here.]

Buckley writes of his macro-social model the following description in accord with Chart No. 2:

> In the general cybernetic model of the error-regulating feedback system, we may distinguish . . . five stages. 1) A control center establishes desired goal parameters and the means by which they may be attained; 2) these goal decisions are transformed by administrative bodies into action outputs, which result in certain effects on the state of the system and its environment; 3) information about these effects are recorded and fed back to the control center; 4) the latter tests this new state of the system against the desired goal parameters to measure the error or deviation of the initial output response; 5) if the errors leave the system outside the limits set by the goal parameters, corrective output action is taken by the control center.[5]

He goes on to caution the reader that this presentation is overly simple and that it is greatly fraught with problems. Nonetheless, the utility of this model for establishing the processual framework of the organizational intelligence function of the university is critical for a dynamic understanding. This Buckley model serves adequately as the pattern of the university in the macro-social system.

A man from Mars, trying to understand the American higher education landscape, would view it as a veritable jungle of colleges and universities, professional organizations, governmental units layered as a club-style sandwich, as well as consortial arrangements and communications nets that appear inextricably tangled as a skein of yarn after the work of playful kittens had been accomplished. That appearance is much the same for the new college president. But there is some order to that landscape which is inhabited by colleges and universities. There is a system of macro-organizations

which provide national and state direction and leadership, all of them rooted in the twin power bases of the guild of higher education and the loci of power in government and private groups.

The character and range of macro-organizational structures in American higher education is suggested by the Coumelis typology of these organizations.[6] On the foundations of basic loci of power and the character of federal structure, Chart No. 3 presents the pattern which sets the macro-social world of higher education in perspective. This chart succinctly cross-classifies these organizations by types, i.e., federal agencies and state governing boards, professional associations of institutions and/or persons within the guild of higher education, voluntary organizations at state, regional, national, and institutional levels. Given this understanding, the Buckley model takes on a new light.

[Insert Chart No. 3 here.]

Pragmatically, the university (individually or in association with others) attempts to tap into each stage of Buckley's model. The university lobbies at governmental power centers to help form the goal parameters. The university attempts to influence the administrative decision-making processes at governmental agency levels in areas like "grants-

manship" for facilities and research funding. The university attempts to sound out the pragmatic effects of a given governmental or non-governmental policy upon themselves and others like them. The university attempts to mold the feedback processes and feedback contents. The university attempts to determine the character of the feedback tests. And the university attempts to effect the character of the corrective measures toward its favor. For the Washington scene, Bloland's Higher Education Associations in a Decentralized Educatio. System (1969) documents this story; and Paltridge's study of California's Coordinating Council for Higher Education (1966) provides a partial view of a state level agency.[7] The Buckley model succinctly maps the tap-points through which organizational intelligence flows to-and-fro between higher education and the public and private power bases in the United States.

Institutional research organizations of universities and their associations contribute directly into the national informational pool on American higher education. Their contributions primarily consist in providing to governmental and non-governmental agencies such organizational intelligence about themselves as are required on demand by the ubiquitous survey questionnaire. Some of the materials, collected year after year, develop into valuable time series for governmental and non-governmental policy development. Other data are collected for ad hoc studies of current concern. Hence,

institutional research organizations in American universities contribute to the macro-social monitoring of American higher education. Providing useful comparative inputs, such qualitative statistics very often become criterial referencing instruments for a given university, particular state or federal agency, and private non-governmental organization for specific areas, such as enrollment, facilities, degrees, financial and cost data, personnel, curricula and other matters.

The Nature of Organizational Intelligence:

In psychodynamic and sociodynamic open systems, common sense and sophisticated inquiries are ambiguity reduction processes through which a person, an institution such as the university, or a whole society constructs a cosmology or Weltanschauung, tests its reality against that cosmology, and references its meaning therefrom.[8] This was well understood by Dewey when he wrote:

> Inquiry is the controlled and directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole.[9]

But are there classes of indeterminate situations which can be treated generically by science? Are there classes of human situations which tend toward ambiguity? I believe there are. In fact, I will further assert that these basic classes of in-

determinate and ambiguous situations yield the basic patterns of inquiry that lead to organizational intelligence of the open systems university.

If Aristotle is read aright, he infers that there are three types of human "knowing" situations which tend toward ambiguity or indeterminacy. For him, these human situations are three in number. The first situation is the "What is it?" situation which Aristotle calls theoretical knowledge.[10] The second is Aristotle's productive knowledge, the human situation being characterized by the instrumental question, "How to do it?".[11] The third is the "What ought to be done?" situation or Aristotle's practical knowledge.[12] Each of these forms of knowledge will be discussed in terms of the university's intelligence function.

By theoretical knowledge, one means a warrantable assertion or proposition derived by answering the generic question, "What is the nature of the case?". Questions like "Who was George Washington?" or "Are solar eclipses predictable?" or "What is the binomial theorem?" are theoretical questions. They reflect the everyday query "What is that?". Answers to theoretical questions are warrantable assertions or propositions, such assertions or propositions being theoretical knowledge. For Aristotle, such knowledge would be the indubitable about the invariant. Hence the denotations for such terms as "fact," "law," and "prediction." But contemporary epistemologists suggest that human knowledge is always partial

and fallible and never complete and indubitable.

In symbolic terms, the theoretical assertion would take on the form:

$$\exists x. \qquad [1]$$

This sentence reads generically: There exists (perhaps uniquely) an "x" of such character. Thus the proposition "George Washington was the first president of the United States under the federal constitution, 1789-1797." is a theoretical proposition in the pattern of $\exists x$. "The binomial theorem is a mathematical expansion proven by induction." is theoretical proposition. Also a definition of culture constitutes a theoretical sentence. The Aristotelian notion of theoretical knowledge does not refer to the levels of generality or abstraction of a given proposition. Thus, "$s = 1/2\ gt^2$" and "My name is Tom Jones." are both theoretical statements.

Offices of institutional research typically produce studies that are theoretical in kind. Systematic and ad hoc monitoring yield observations. When these are analyzed and structured to meet the need of knowing "What is the nature of the case?", the resulting propositions or conclusions are pieces of reality-testing organizational intelligence for the university. The indeterminate or ambiguous situation takes on the form $\exists x$. Cost benefit analyses, space studies, student characteristic profiles, CUES inventories, and projections of all types yield propositions which assert the nature of the

sought "x."

Productive knowledge refers to an actional proposition that is descriptive of process or method. Intellective and psychomotor skills are involved in such propositions; and when productive propositions are made about human affairs, social interaction skills are the concern. An example of the later are the Dale Carnegie courses built upon social interactive principles.

Productive propositions are responses to the generic instrumental question "How to do it?". A discernible end-product is expected. Be the end-product a cake, a dance, or a doctoral dissertation, it is presumed that knowledge of the process or method will provide instrumentally an explicit product.

In a productive knowledge statement, explicit theoretical knowledge is known about the means or process, the ends or the product created, and the predictable and relatively invariant relation between them which is empirically of a causal order. Given these facts, productive knowledge statements are in the following generic symbolic form:

$$\exists x = f\underline{\pi}. \qquad [2]$$

The generic reading of this symbolic proposition is: There exists an "x" that is a direct function of process $\underline{\pi}$. The following are examples of knowledge statements that are productive:

(1) Field testing of test items (π) is required in order to produce objective, valid, and reliable questions ($\exists x$).

(2) Hold your right hand over the piano keyboard with the fingers poised in an arched position above the keys and firmly press each key sequentially (π) in order to produce the piano tones in that order ($\exists x$).

In these statements, known means are known to be related causally to known ends, the temporally ordered regime being defined.

Techniques and methodologies -- sets of productive propositions -- have been developed to meet institutional research needs. The Russell-Doi manual for space utilization studies, academic prediction scales, Koza's systems approach to curricular planning and review, and the Judy-Levine CAMPUS simulation model reflect this type of creative work in productive information technology. And there is little doubt that there are a good many more such techniques and methods being developed in offices of institutional research in American universities.

Practical knowledge is concerned with the practical situation of "What ought to be done?". The areas of decision, choice, and preferenced action are the contents of practical statements. Practical knowledge statements have as their aim the guidance and alteration of the course of human affairs while persons are, so to speak, in transit toward their desired goals, be these goals intermediate or ends-in-themselves. Practical knowledge propositions are future oriented statements, statements guided by purposes, perhaps, the shapes of which are in-

determinate, from the specific vantage point of the present. The practical statement is guided by axiologically determined ends reflecting the best of what man is capable through deliberate actions and processes known to him.

Whereas the emphasis in productive knowledge statements appears to stress explicit knowledge of particular means in an invariant relation with specific product ends ($M \supset E$), the emphasis of practical knowledge statements appears to mark a probabilistic relation of ends to means, given the fact that a specific end can be achieved through a number of alternative means, some more probable than others, viz., $E \supset K(M_1, M_2 \ldots M_n)$. The deliberating process required to determine a given alternative which would have efficiency and effectiveness in attaining some desired goal is an inquiry. The result of such an inquiry is a practical knowledge proposition of the following pattern:

$$\exists x = f\, V(pA_n). \qquad [3]$$

This proposition reads generically: There exists an "x" such that it be probably attainable through a particular alternative A_n, selected with the aid of value system V. The form of each alternative in any given set is that of the productive statement, viz., $\exists x = f\pi$. What is sought is an identity between the desired goal and the goal that is attainable through a particular productive proposition. Therefore, the inquiry of

practical questions requires the investigation of each alternative as disjunctive "If . . . then." statements with a probability function assigned to each. The selection of a particular alternative is in fact the selection of a particular productive statement which is estimated to have the highest probability of success in achieving the desired goal.

To exemplify this process, Dewey presents the following apt commonsense illustration:

> Disjunctive propositions are connected with practical judgment for deliberation upon matters of policy requires (a) that alternative possibilities be instituted and explored, and (b) that they be such as to be readily comparable with one another. For example, a man who has come into possession of a large sum of money proceeds to deliberate as to what he shall do with it. His deliberation gets nowhere unless it takes the form of setting up alternative possible uses for the funds at command. Shall it be placed in a savings bank to draw interest? Invested in stocks, in bonds, in real estate? Or shall it be used for purposes of travel, or buy books, apparatus, etc.? The problematic situation is relatively determinate by analysis into alternatives, each of which is representative in a disjunctive proposition as a member of a system.[13]

The deliberative activity in decision-making processes rests upon organizational intelligence of the theoretical and productive types. Both of these types of intelligence can and are produced by institutional research offices or some counterpart thereof. However the development of practical propositions such as institutional goals, policies, and commitments of the broadest types is the prime responsibility of policy-making officers who require and use reality-testing information for sound judgments that are empirically based. Decision-making

is an axiological process; it is not a technical or engineering process. Thus the technocratic planner (be he in the business office, the development office, or the institutional research office) has two roles to perform. The first is the ante-decisional role of resource information consultant; the second is the post-decisional role of rational reifier of dreams. What remains to be discussed in this context is the intersect of values, decision-making and the university's institutional integrity to be.

Axiology, Decision-making and University Commitment:

Every social system has a rather stable hierarchical set of values at any given time. America's society is no different, for the ultimate justification of education at all levels rests upon the federal constitutional goal of the general welfare.[14]

The American university, like other institutions in our society, is directed and dominated by a truncated categorical imperative -- the duty to fulfill its aims. This is not an easy task. Regardless of the manner or form in which the university's aims are cast, they become the criteria against which its reality is tested and measured.

Generally, decision-making in the university ought to be an ethical affair -- an explicit ethical affair. How ethical are academic prediction formulae and cut off scores in admissions

procedures? Is there an ethical content to the arguments over semester, quarter, and trimester systems? Is curricular relevance significantly measured by continuous student involvement? Are indifference curve analyses ethical criterial bases for curricular design? Is institutional research anonymity and "amoral" data reporting responsible behavior in the academic community which prizes responsibility and independency of opinion arising from competence? What is the proper moral use of data in educational decision-making? Though a given university's aims and policies provide some closure on such matters, the significance and efficacy of ultimate moral justification of the university (its aims, and policies, its personal and institutional acts) requires the study of those meta-ethical principles upon which ultimate moral judgments are based.[15] The hope and expectation is that the process of conscious and rational ethical discourse be used to work through to an ultimate justification of the university in a particular instance. Institutional decision-making after this ethical study will be qualitatively better and sharper. Intent and reality would be merged within the vitals of the university as a social system. The public secular university no less than the private and religiously-oriented institution has the obligation and the need for continuing ethical self-examination. Our students painfully are reminding us of that duty. This is a total university responsibility in which institutional research personnel have a role significantly above the technical ordering of priorities by some simulation program. Indeed, the

assignment of effective and efficient utilities would be derived from this prior axiological work.

There are two functions for institutional research in university policy development and administrative-instructional practice. The one function is to bring to policy development and university praxis in administration and instruction such knowledge and expertise so that the policy-makers and the educational practitioners can do their jobs. Great care should be taken in using the institution's axiological framework as a valuational filter, by clearly stating the assumptive character of that filter. Unlike the unstated assumption in all of WICHE's management systems work, there are no autonomous and amoral facts or data. All observations are selectively defined and categorized by and for the prior axiological intents of the designers.

The second function for institutional research is to monitor and evaluate administrative and instructional practice against the criterial aims of the institution. This monitoring and evaluating is a reality-testing function, so necessary to institutional vitality and effectiveness.

Of this latter function, there are some significant questions that need to be asked repeatedly. Some of these questions are the following:

(1) Does the chief financial or business officer make curricular decisions? If so, how and why?

(2) Does the faculty objectively evaluate instructional competence within their departments?

(3) What is the evidence of the service quality rendered by the counseling staff in the institution?

(4) Is university trustee service competent?

(5) What is the quality of the development program of the university?

(6) Is student government an effective educating activity of the university?

(7) What is the educational quality of varsity sports for the university students involved?

(8) Are faculty hiring and firing practices humane and professional in character?

(9) How effective is the university ombudsman?

(10) What is the public image of the university?

Such searching questions are cybernetic-type questions about significant programmatic elements in the university. These monitoring questions are more than a cut above in importance than the usual budget audit or grade distribution record. The answers to such questions refer the productivity of the university to be compared to its aims. The answers to such questions will establish that the university's productivity is reified fact of wishful and pious expectations. To paraphrase Hume, ideals without facts are empty and facts without ideals are blind.

The question of reality-testing for offices of institutional research needs much to be raised. As responsible institutional researchers, do you raise and seek answers to the following types of questions?

(1) How good are your services to the university? What systematic evidence do you have for your estimate?

(2) Do you evaluate the quality of your regular monitoring systems; or do you react in a crisis-oriented manner?

(3) What is the image and reputation of the office of institutional research on your campus? Have you brought in an outside consultant/evaluator to give you an objective report?

(4) Does the administration monopolize your services?

(5) Do faculty and students come to you for service and do you provide them with service? If not, why not?

(6) What is the ethical character of your use of organizational intelligence on campus? What evidence do you have that your perception is shared by others on campus?

(7) Have you had your "best" formal reports evaluated by impartial panels outside of your institution?

(8) Does your office of institutional research investigate the effect of its services on the qualitative operation of your institution?

(9) Do you farm-out or contract out internal research projects for reasons of better competence and/or objectivity in the matter to be studied? If not, why not?

(10) Do you deliberately seek to establish and maintain a low silhouette on campus and publish reports that exhibit broad "office" authorship? If so, why?

There is little doubt in my mind that such questions as these, when thoroughly investigated, would enhance the quality of cybernetic service to the university.

Sir Francis Bacon stated that knowledge is power. But it is the nature of power to be amoral, undifferentiated in effect, and incompetent. As agents with the duty to service the university's critical cybernetic needs, you know that the

persuasive force of moral competence and professional skill can bring knowledge into a creatively differential and beneficial use. Only the highest validated values of the university can inspire the use of organizational intelligence toward achieving its highest aspirations.

Concluding Note:

The open systems model of the university defines the function of institutional research to be a cybernetic one. The internal and external reality-testing function is a vital duty and a moral charge. Though policy makers and educational practitioners can carry on for a considerable length of time with organizational intelligence of law validity,[16] the gradual and cumulative results of low validity intelligence is organizational crisis. Therefore, the institutional researcher labors under a categorical imperative, a duty toward institutional integrity and survival. But more significantly, this categorical imperative rests as a creative opportunity upon the total university as community, no less for trustee and president than for faculty, students and the many valued service personnel.

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[6]James Steve Counelis, Macro-Administration in American Higher Education: Some Research Directions (Eric ED 031 168; University Park, Pa.: College of Education-The Pennsylvania State University, 1967), pp. 11-17, 31-32.

[7]Harland G. Bloland, Higher Education Associations in a Decentralized Education System (Berkeley, Cal.: University of California Center for Research and Development in Higher Education, 1969); and, James G. Partridge, California's Coordinating Council for Higher Education: A Study of Organizational Growth and Change (Berkeley, Cal.: University of California Center for Research and Development in Higher Education, 1966).

[8]For significant papers in this area, see: (1) Peter L. Berger and Thomas Luckman, The Social Construction of Reality: A Treatise in the Sociology of Knowledge (A589; Garden City, N.Y.: Anchor Books, 1967); (2) Peter L. Berger The Sacred Canopy: Elements of a Sociological Theory of Religion (A638; Garden City, N.J.: Anchor Books, 1969).

[9]John Dewey, Logic: The Theory of Inquiry (New York: Henry Holt and Company, 1938), pp. 104-105.

[10]Aristotle, Physica, ii.1, 3.194b16-195a26; An. Post. ii.19.99b15-100b18; Metaphysica, i.1980a21-981b10; Ethica Nicom., vi.3, 6.

[11]Aristotle, Ethica Nicom., vi. 4, 5, 7.

[12]Aristotle, An. Post., i.33.88b30-89a39; Ethica Nicom., i.3.1094b12-1094b29; iii, vi. 8, 9.

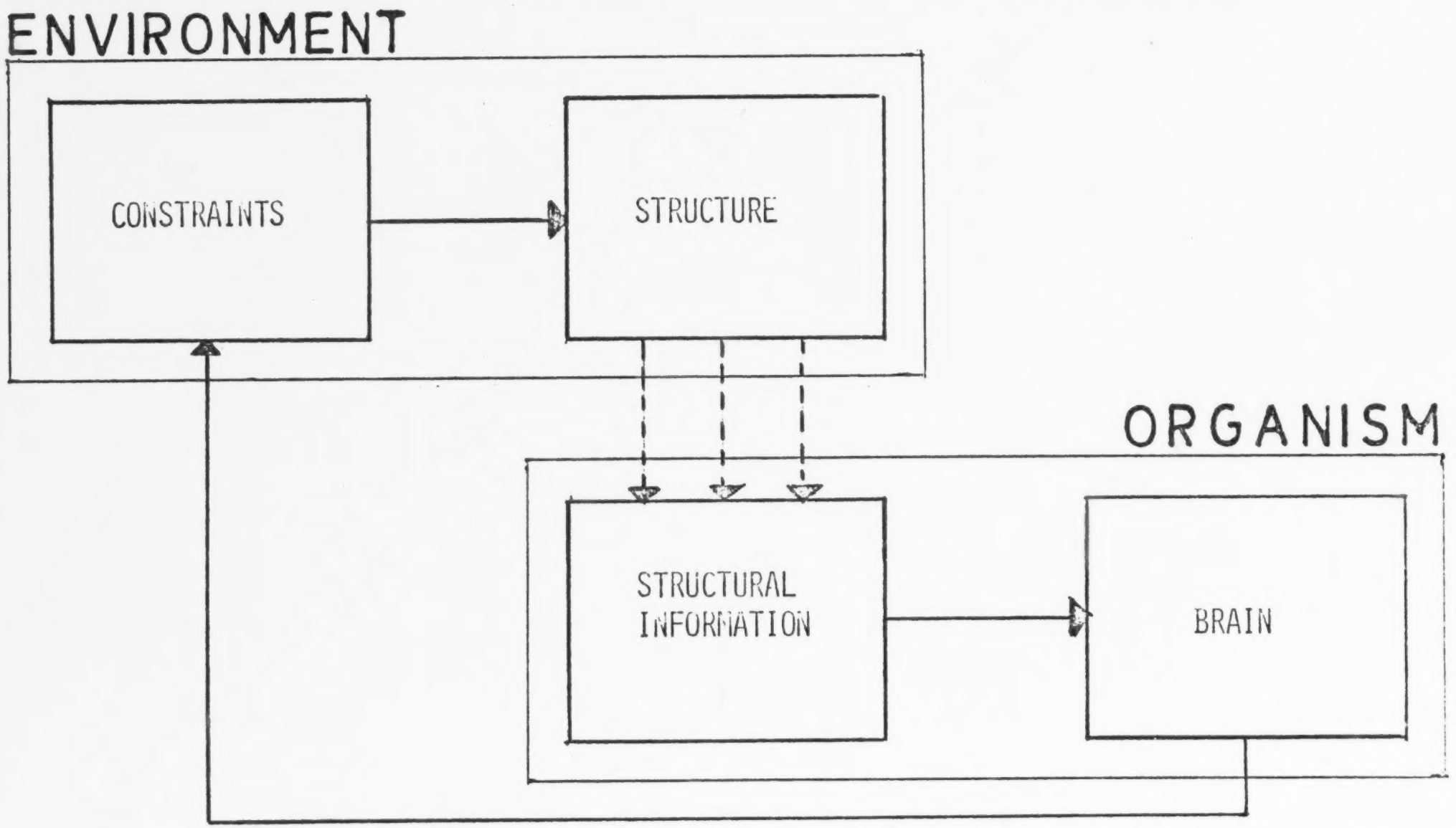
[13]Dewey, op. cit., p. 171.

[14]For the model of America's social value system in relation to American higher education, see: James Steve Counelis, American Government, Higher Education and the Bar (Ph.D. dissertation-Library of Congress Microfilm; Chicago: The University of Chicago Department of Education, 1961), Ch. V.

[15]An effective introductory understanding of this meta-ethical study, see, A. Phillips Griffiths, "Ultimate Moral Principles: Their Justification," The Encyclopedia of Philosophy (1969), Vol. VIII, pp. 177-182. For significant systematic study and commentary on values, see: (1) Denis Goulet "An Ethical Model for the Study of Values," Harvard Educational Review, Vol. XLI, No. 2 (May 1971), pp. 205-227; (2) Clyde Kluckholm, "Values and Value-Orientations in the Theory of Action: An Exploration in Definition and Classification," in Toward a General Theory of Action, edited by Talcott Parsons and Edward A. Shils (Cambridge, Mass.: Harvard University Press, 1959), pp. 388-433.

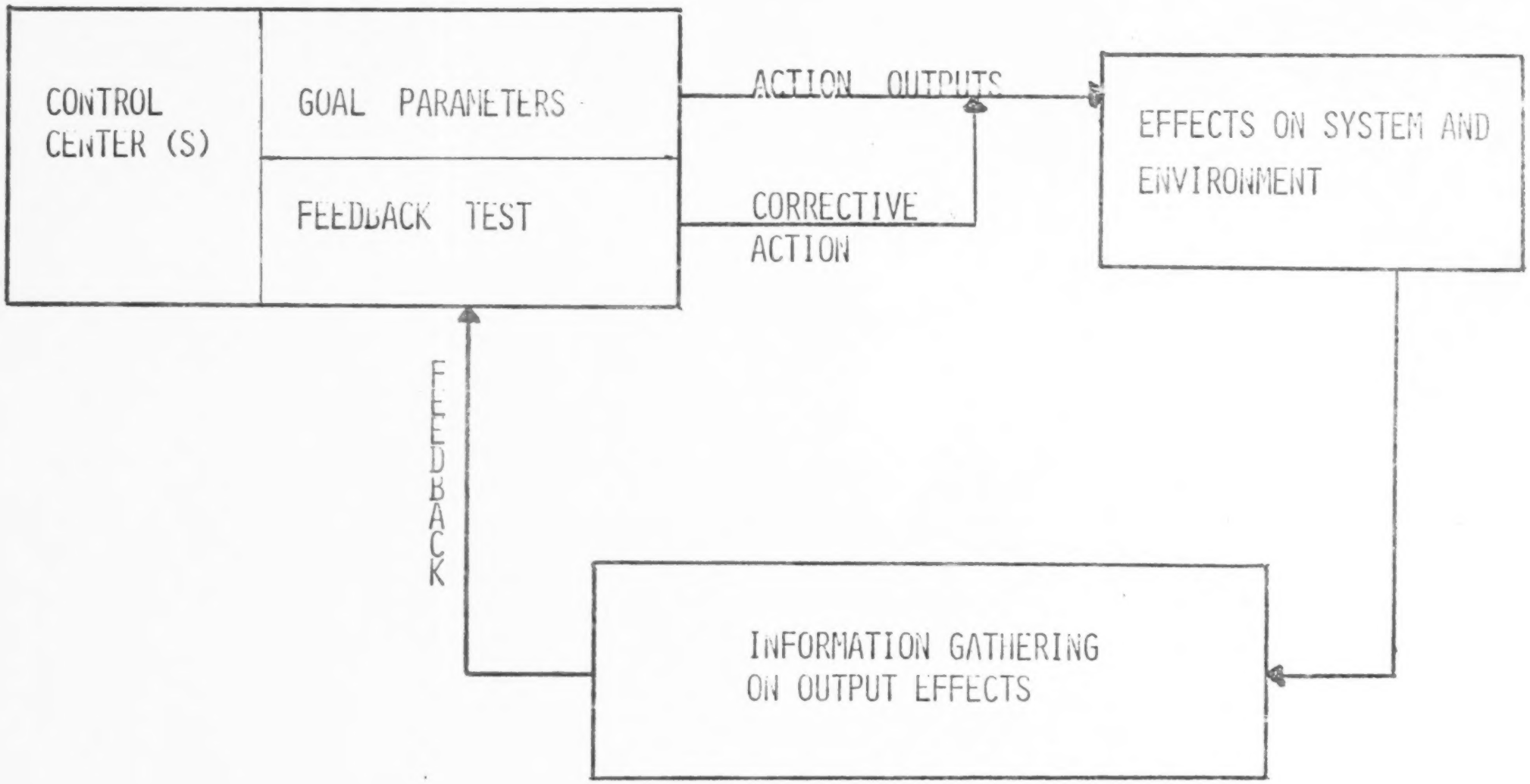
[16]Amitai Etzioni, The Active Society: A Theory of Societal and Political Processes (New York: The Free Press, 1968), Ch. VI.

CHART NO. 1: THE VON FOERSTER MODEL



SOURCE: Heinz von Foerster, "From Stimulus to Symbol: The Economy of Biological Computation," in Modern Systems Research for the Behavioral Scientist, edited by Wlater Buckley (Chicago: Aldine Publishing Company, 1968), p. 172.

CHART NO. 2: THE BUCKLEY MODEL



SOURCE: Walter Buckley, Sociology and Modern Systems Theory (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967), p. 173.

CHART NO. 3: A TYPOLOGY OF MACRO-ORGANIZATIONS IN AMERICAN HIGHER EDUCATION

		AMERICAN HIGHER EDUCATION MACRO-ORGANIZATIONS	
		TRANS-SOCIETAL (GOVERNMENTAL POWER LOCUS)	TRANS-INSTITUTIONAL (INSTITUTIONAL POWER LOCUS)
FEDERAL PATTERNS	CENTRALIZED	FEDERAL AGENCIES STATE GOVERNING BOARDS	PROFESSIONAL ASSOCIATIONS OF INSTITUTIONS AND PERSONS
	PERIPHERALIZED	STATE VOLUNTARY CO-ORDINATING AGENCY NATIONAL AND REGIONAL COMPACTS	BILATERAL AND MULTILATERAL ARRANGEMENTS AND AGREEMENTS

SOURCE: James Steve Counelis, Macro-Administration in American Higher Education: Some Research Directions (ERIC ED 031 168; University Park, Pa.: The Pennsylvania State University-College of Education, 1967), p. 32.